CLAIMS

What is claimed is:

1. A DC offset correction system for a direct-conversion receiver that includes a baseband section that has an input and an output, the DC offset correction system comprising:

a DC feedback correction servo-loop in signal communication with the baseband section, wherein the DC feedback correction servo-loop is coupled to both the input and output of the baseband section; and

an attenuator within the DC feedback correction servo-loop.

2. The DC offset correction system of claim 1, wherein the DC feedback correction servo-loop includes:

an integrator circuit in signal communication with the output of the baseband section; and

a combiner circuit in signal communication with the input of the baseband section.

3. The DC offset correction system of claim 2, wherein the attenuator is capable of generating an attenuation coefficient k_{fb}.

4. The DC offset correction system of claim 3, wherein the attenuator includes a resistor and a Sallen-Key *RC* filter.

5. The DC offset correction system of claim 2, wherein the integrator circuit is a *RC* filter.

6. The DC offset correction system of claim 2, wherein the integrator circuit is a non-*RC* filter.

7. The DC offset correction system of claim 1, wherein the attenuator is capable of generating an attenuation coefficient k_{fb}.

8. The DC offset correction system of claim 7, wherein the attenuator includes a resistor and a Sallen-Key *RC* filter.

9. The DC offset correction system of claim 8, further including a controller in signal communication with the baseband section and the attenuator.

10. The DC offset correction system of claim 3, further including a controller in signal communication with the baseband section and the attenuator.

11. The DC offset correction system of claim 1, further including a controller in signal communication with the baseband section and the attenuator.

12. A DC offset correction system for a direct-conversion receiver that includes a baseband section that has an input and an output, the DC offset correction system comprising:

a DC feedback correction servo-loop in signal communication with the baseband section, wherein the DC feedback correction servo-loop is coupled to both the input and output of the baseband section; and

means for producing an attenuation coefficient k_{fb} within the DC feedback correction servo-loop, the attenuation means in signal communication with the input of the baseband section.

13. The DC offset correction system of claim 12, wherein the DC feedback correction servo-loop includes:

a means for integrating a received signal from the output of the baseband section; and

a means for combining an attenuated feedback signal produced by the attenuation means with received signals to the input of the baseband section.

14. The DC offset correction system of claim 13, wherein the attenuator means is capable of generating an attenuation coefficient k_{fb}.

15. The DC offset correction system of claim 14, wherein the attenuator means includes a resistor and a Sallen-Key *RC* filter.

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15. The DC offset correction system of claim 13, wherein the means for integrating includes a *RC* filter.

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16. The DC offset correction system of claim 13, wherein the means for integrating includes a non-*RC* filter.

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17. A method for correcting for DC offset in a direct-conversion receiver that includes a baseband section that has an input and an output utilizing a DC offset correction system, the method comprising:

processing a received baseband output signal from the output of the baseband section to create a processed feedback signal;

attenuating the processed feedback signal with an attenuation coefficient k_{fb} to create an attenuated feedback signal;

transmitting the attenuated feedback signal to the input of the baseband section.

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18. The method of claim 17, wherein processing includes integrating the received baseband output signal with an integrator circuit.

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19. The method of claim 17, wherein attenuating includes generating the attenuation coefficient k_{fb} utilizing a resistor for a summation with a Sallen-Key *RC* filter.

20. The method of claim 19, wherein the attenuation coefficient k_{fb} is implemented by the ratio of a feedback resistor over the resistor in the input path as Sallen-Key *RC* filter.

21. The method of claim 17, wherein transmitting includes combining the attenuated feedback signal with a input signal that is being input into the baseband section.